

CLAIMS

1. A method for establishing a signaling connection
5 between a client terminal and a communications network, the
method comprising the steps of:

establishing an authentication connection between the
client terminal and the communications network;

10 transmitting an authentication message from the
communications network to the client terminal;

transmitting set-up parameters from the
communications network to the client terminal, the set-up
parameters including information for establishing a signaling
connection between the client terminal and the communications
15 network for transferring control data;

establishing the control data signaling connection
using the set-up parameters;

transmitting signaling information between the client
terminal and the communications network via the control data
20 signal connection; and

closing the authentication connection.

2. A method according to claim 1, further
comprising the step of transmitting from the client terminal to
25 the communications network acknowledgement of receipt of the
set-up parameters.

3. A method according to claim 1, wherein the step
of closing the authentication connection is performed in
30 response to the establishing of the control data signal
connection that corresponds to a dedicated signaling tunnel.

4. A method according to claim 1, wherein the client terminal is a mobile terminal and the communications network is a 3G network.

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5. A method according to claim 1, wherein the step of establishing an authentication connection between the client terminal and the communications network is performed by way of a path including a wireless network which complies with IEEE 10 802.11 standards.

15 6. A method according to claim 1, wherein the step of establishing an authentication connection between the client terminal and the communications network includes the steps of establishing EAPOL and DIAMETER connections.

20 7. A method according to claim 1 wherein the control data signal connection is a GTP tunnel, and the step of transmitting set-up parameters includes the step of transmitting at least one of an IP address and a tunnel ID.

25 8. A method according to claim 7 wherein the step of transmitting set-up parameters includes the step of transmitting QOS parameters.

30 9. A method according to claim 1 wherein the control data signaling connection is a dedicated GTP tunnel, and the step of transmitting set-up parameters includes the step of transmitting both an IP address and a tunnel ID.

10. A method for implementing tight coupling communications, said method comprising the steps of:

5 providing a wireless local area network access point having protocol stacks suitable for operation with a loose coupling arrangement;

10 initially establishing an EAP/EAPOL connection by way of said wireless local area network access point between a mobile terminal and a cellular system server for the flow of authentication and control information including parameters for a control data signaling connection;

15 following authentication by said server, closing said EAP/EAPOL connection and opening a corresponding control data signaling connection using said parameters.

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11. A method according to claim 10, wherein said step of establishing an EAP/EAPOL connection includes the step of transmitting parameters for a GTP tunnel; and

20 said step of opening a control data signaling connection includes the step of opening a GTP tunnel.

12. A method according to claim 10, wherein said step of closing said EAP/EAPOL path is performed after said control data signaling connection is opened.

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13. A method according to claim 10, comprising the further step, following authentication by said server, of transmitting authorization to said access point to pass user data for said mobile terminal.

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14. A method according to claim 13, wherein said step of transmitting authorization to said access point is performed using DIAMETER protocol.

15. A method according to claim 10, further comprising the step, following said authentication by said server, of reporting to said mobile terminal the success of
5 said authentication.

16. A method according to claim 10, wherein said step of closing said EAP/EAPOL path is performed before said control data signaling connection is opened.

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17. A method according to claim 10, wherein said step of closing said EAP/EAPOL path is performed concurrently with opening of said control data signaling connection.

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18. A method for operating a client terminal to establish a control connection to a communications network, said method comprising the steps of:

from said client terminal, establishing an authentication connection between said client terminal and said 20 communications network, and requesting authentication;

at said client terminal, receiving an authentication message from said communication network, said authentication message including set-up parameters defining a control data signaling connection between said client terminal and said 25 communications network;

from said client terminal, setting up said control data signaling connection by use of said set-up parameters;

transmitting control information between said client terminal and said communications network via said control data 30 signaling connection; and

closing said authentication connection.

19. A method according to claim 18, wherein said step of closing said authentication connection is performed after said step of transmitting control information between 5 said client terminal and said communications network via said control data signaling connection.

20. A method according to claim 18, wherein said steps of (a) establishing an authentication connection and (b) 10 transmitting control information are performed by way of a wireless access point.